

Encouragement of Learning Through War Video Games as an Intelligible Textbook on International Humanitarian Law

Keisuke Minai†

This study analyzes the manner in which undergraduate students learn International Humanitarian Law (“IHL”) through the war video game *Arma 3* by means of the grounded theory approach and considers the effect of learning IHL through video games. As a result of data analysis, “identifying the targets of attacks” emerges as a core concept on the phenomenon of learning IHL through video games in addition to eight sub-concepts encircling this core concept. Sorting out the relevance among these concepts, the present study discovers six patterns to explicate the phenomenon, which are as follows: (A) smooth IHL learning with the use of knowledge already acquired; (B) committing illegal acts as virtual reality; (C) disregarding the instructors’ lectures and committing illegal acts; (D) learning IHL norms on the basis of lectures by the instructors; (E) discovery of IHL norms during gameplay; and (F) trajectory modification from illegal acts. By intercomparing these six patterns, the author isolated four distinct operations that are central to IHL application learning through war games, which include 1) paying attention to lectures by the instructors; 2) working on elements for identifying the targets of attacks; 3) imagining real fighting conditions and feeling empathy for real combatants; and 4) paying attention to admonitions after illegal acts. Accordingly, so as to achieve further improvement of the effect of IHL learning through war video games, it can be contended that adopting contrivances that enable players to pass through these four operations is extremely important.

Introduction	644
I. Research Object and Method	647
II. Data Analysis and Findings	651
A. Overview	651
B. Pattern A: Smooth IHL Learning with the Use of Knowledge Already Acquired	652
C. Pattern B: Committing Illegal Acts as Virtual Reality ...	655
D. Pattern C: Disregarding the Instructor’s Lectures and Committing Illegal Acts	657

† Associate Professor of International Law, Faculty of International Studies, Osaka University of Economics and Law, Japan; J.D., Keio University Law School, Japan.

E. Pattern D: Learning IHL Norms on the Basis of Lectures by the Instructors	658
F. Pattern E: Discovery of IHL Norms During Gameplay ..	660
G. Pattern F: Trajectory Modification from Illegal Acts.....	662
III. Discussion	664
A. Exordium.....	664
B. The Learning Effect of Paying Attention to Lectures by the Instructors	664
C. The Learning Effect of Working on Elements for Identifying the Targets of Attacks	666
D. The Learning Effect of Imagining Real Fighting Conditions and Feeling Empathy for Real Combatants ..	668
E. The Learning Effect of Paying Attention to Admonitions by the Instructor after Illegal Acts	669
F. Two Models of Constructing Consciousness of Legal Compliance.....	670
Conclusion	671

Introduction

In recent years, attempts to make use of video games for education have remarkably expanded. Video games not only play a traditional role in assisting the development of cognitive facilities during the infant and primary education stages but have also been shown to offer simulations for higher education in specialized fields, such as business, governance, and healthcare.¹ Lecturers in various disciplines can use video games as a medium to facilitate an understanding of subtle concepts, theories, and doctrines.

Video games have been shown to effectively illustrate abstract notions and principles in legal education. By playing video games that describe law as experiences in the context of narratives in video games, gamers can substantially engage in decision-making about law, not as passive observers but as active experimenters.² By playing these games, players can place law into their structures of consciousness by reconceptualizing legal issues and abstract ideas of justice.³ When students are gamers, video games can help them learn profound legal notions or principles in the form of applying these laws to the students' own experiences in the vast virtual world. Thus, there is no need for gaming students to learn such notions and principles strictly via cases in textbooks or through judicial precedents that are the experiences of others. Certainly, students have hitherto trained themselves to apply legal norms and principles in traditional law school activities, such as mock trials and role-playing, however

1. Craig Newbery-Jones, *Ethical Experiments with the D-pad: Exploring the Potential of Video Games as a Phenomenological Tool for Experimental Legal Education*, 50 L. TCHR. 61, 67-68 (2016).

2. Craig John Newbery-Jones, *Answering the Call of Duty: The Phenomenology of Justice in Twenty-First-Century Video Games*, 9 L. & HUMAN. 78, 84 (2015).

3. *Id.* at 79, 100-01.

these activities do not make up the majority of real-life law events. Virtual reality in video games can replicate our extremely varied society and has the potential to infinitely extend students' active application of the law.

One of the fields of legal studies that enjoys the most benefits of video game's virtual reality is International Humanitarian Law ("IHL"). Clarke, Rouffaer and Sénéchaud suggest that, in respect to "video games and IHL" as a field of inquiry that has widened the purview of the discourse, the use of video games can affect the strengthening of comprehension and esteem of IHL by treating players as active participants who face dilemmas similar to those of real combatants in simulated battlefields.⁴ Brown, Greenberg, Hudson, and Sanger argue that IHL is suitable for integration in video games because the games not only require players' discretion in decision-making and controlling the camera and encourage players' active and profound consideration of intricate matters but also portray much more pivotal issues of IHL than books and slide presentations.⁵ To quote Moffett, Cubie, and Godden, "Within the context of a university setting, it is clear that using computer games to teach international humanitarian law can be a beneficial way of accessing students' multiple intelligences and providing additional learning entry points to bridge the gap between black letter law and real-world application."⁶ "To bridge" here implies that video games allow for application of IHL's norms and principles in virtual combat fields. Video games create virtual reality battlefields that minimize the view of traumatizing scenes in order to avoid clear moral and ethical problems resulting from using archival shots of real warfare that blatantly show the intricacy and consternation of war.⁷ Video games thus encourage students to actively apply their knowledge of IHL to the events within the virtual reality battlefields in the safe confines of the classroom.⁸ By exposing students to a simulated world of armed conflicts, today's video games allow students to apply real IHL norms to the virtual battlefields replicated in their classrooms.

One of the most useful video games for learning how to apply IHL is *Arma 3. Laws of War DLC*, a downloadable content pack for *Arma 3*, was created in a collaboration between the game development company Bohemia Interactive and the International Committee of the Red Cross ("ICRC")⁹ with the intent to "explore new ways to spread messages about

4. Ben Clarke, Christian Rouffaer & François Sénéchaud, *Beyond the Call of Duty: Why Shouldn't Video Game Players Face the Same Dilemmas as Real Soldiers?*, 94 INT'L REV. RED CROSS 711, 712-13, 714, 735 (2012).

5. Gary Brown, Daniel Greenberg, Seth Hudson & Kurt Sanger, *Rules of the (Video) Game: IHL on the Virtual Battlefield*, 109 PROC. ANN. MEETING (AM. SOC'Y INT'L L.) 55, 55, 57-58, 59 (2015).

6. Luke Moffett, Dug Cubie & Andrew Godden, *Bringing the Battlefield into the Classroom: Using Video Games to Teach and Assess International Humanitarian Law*, 51 L. TCHR. 499, 513-14 (2017) (emphasis added).

7. *Id.* at 503.

8. *Id.* at 503-04.

9. To date, having argued about baneful repercussions of premitting the violations of IHL in video games on players, ICRC and the Red Cross Societies in many States have focused on usefulness of video games as educational materials and continued to

International Humanitarian Law” and to “reach millions of people to familiarize them with IHL.”¹⁰ The virtual reality simulations in *Showcase Laws of War IDAP Training Course*, offered in *Laws of War DLC*, is one of the most appropriate educational tools for experiential learning of applying IHL.¹¹

By examining the *Showcase Laws of War IDAP Training Course*, this paper considers the effect of learning IHL through video games. Specifically, the author addresses the process students as game players go through to learn the specific norms of IHL in the “Non-Combatants” simulation in the training course,¹² which aims to teach the IHL principle of distinction.¹³ To this end, the author conducted semi-structured interviews with undergraduate students who play the “Non-Combatants” simulation and collected and analyzed data with respect to their personal learning records, experiences with games, and feedback about gameplaying.

seek for collaboration with the gaming industry. See, e.g., Claire Connelly, *Red Cross Workshop Looks at Rule of War in Video Games*, ADVERTISER, <https://www.adelaidenow.com.au/technology/gaming/six-hundred-million-gamers-could-be-war-criminals-red-cross-says/news-story/49aa2a14baccbecefdc846ee1eea39c2?sv=3c6cc1285b27b79b6399320cf959eafb> [<https://perma.cc/G6EQ-D4UX>] (last visited Mar. 7, 2019); Brian Crecente, *War Crimes in Video Games Draw Red Cross Scrutiny*, KOTAKU, <https://kotaku.com/5863817/war-crimes-in-video-games-draw-red-cross-scrutiny> [<https://perma.cc/KV7S-877T>] (last visited Mar. 7, 2019); Noah O'Connor, *Targeting the Rules of War with Video Games*, HUMAN RIGHTS BRIEF, <http://hrbrief.org/2014/11/targeting-the-rules-of-war-with-video-games/> [<https://perma.cc/D26J-C8BM>] (last visited Mar. 7, 2019).

10. ICRC BLOG, *Why is the ICRC Using Video Games to Spread Awareness of International Humanitarian Law?*, INT'L COMMITTEE RED CROSS, <https://blogs.icrc.org/gphi2/2017/09/11/icrc-using-video-games-spread-awareness-international-humanitarian-law/> [<https://perma.cc/HTX6-8D4K>] (last visited Mar. 7, 2019).

11. As a matter of fact, Moffett, Cubie, and Godden employed *Arma 3* scenarios developed by ICRC for educating IHL in a six-week LLM module and received immensely affirmative feedback from course students. Moffett et al, *supra* note 6, at 506–07, 511.

12. This simulation is composed of three rooms (stages). In the first room where there are only civilians, a player is required to explore every corner and cope adequately with a civilian who takes a direct part in a hostility. In the second room, which is ridden with hostiles, standing battle against the hostile soldiers, the player is needed to spare prisoners of war, enemy soldiers who attach protective emblems (such as red crystal) or are injured and unarmed, as well as objectives with protective emblems. In the last room showing a mixture of civilians and foemen, the player engages enemies with distinction between civilians and enemy combatants, and shall deal appropriately with the enemy's human shields and journalists in proximity to combatants.

13. The principle of distinction is the requirement to protect civilians' lives, bodies, or properties against the effects of hostilities. It also includes the norm providing that the parties to the armed conflict shall at all times distinguish between the civilians and combatants, as well as between civilian objects and military objectives, and accordingly shall direct their operations only against military objectives. This principle is stipulated in Protocols Additional to the Geneva Conventions of 12 August 1949. See Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts (Protocol I), art. 48, June 8, 1977, 1125 U.N.T.S. 3; Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of Non-International Armed Conflicts (Protocol II), art. 13, June 8, 1977, 1125 U.N.T.S. 609. See also MALCOM N. SHAW, *INTERNATIONAL LAW* 1184 (Cambridge University Press 6th ed. 2008).

Of course, *Laws of War DLC* offers a number of valiant narratives by which manifold norms and principles under IHL can be learned outside of the above simulation.¹⁴ There is no doubt that it would be intrinsically desirable to have students play all scenarios and to track their IHL learning processes while doing so. There was no choice however but to confine a single game as the object of inquiry because this study was conducted in one classroom under tight time constraints. The author's intent was to examine students' processes of learning about the principle of distinction, one of IHL's most important concepts, through game simulation and make known the results obtained from this examination, even if they are tentative or restrictive.

In this study, the grounded theory approach was adopted as the methodology for analysis and discussion. In this approach, the author abstracts concepts constituting the phenomenon of students' learning IHL norms through video games embedded with the collected data, identifies a number of patterns of their learning processes by sorting out the relatedness among these concepts, elucidates the machinery for students' learning, and accordingly considers the effect of learning IHL through the video game.

I. Research Object and Method

The author, after having third-year undergraduate students taking his seminar watch an instructor's presentation¹⁵ at the beginning of the *Showcase Laws of War IDAP Training Course* and play the *Non-Combatants* simulation, conducted semi-structured interviews with them. This study examines students' statements or descriptions relating to IHL and the video game obtained from the interviews as the objects of analysis.

To conduct the present study, the author distributed and explained a request paper to all students in the seminar that explicitly provided 1) the significance of this study; 2) privacy protection; 3) that participation in this study is on a voluntary basis and no rejecters faced any disadvantages; and 4) that consent for cooperation is retractable as needed. The author then collected statements or descriptions solely from the students, whose approval was garnered continuously until the completion of the survey, as the data. The students' names, ID numbers, personal information about learning (a list of courses, attendance rates, academic results, and so on), recorded voice data, and text data transcribed from the students' statements and descriptions are all anonymized, placed in a password-protected folder, and saved on the author's password-protected laptop.

14. See Boehima Interactive, *ARMA 3 Laws of War Actions Have Consequences*, ARMA 3, <https://arma3.com/dlc/lawsofwar> [<https://perma.cc/5K8V-SM4P>] (last visited Nov. 21, 2019).

15. In this instructor's presentation, the following four rules are taught: 1) to engage only combatants; 2) to attack only military targets; 3) to spare civilian persons and property; 4) to limit destruction to what the player's mission requires.

This study analyzed fourteen students' data as the object of inquiry with the exception of data from one student who was disapprobative. These fourteen students are all third-year students at the Faculty of International Studies at Osaka University of Economics and Law where global society is studied in multidisciplinary terms.¹⁶ Twelve out of fourteen students have gotten credits for subjects associated with international law and seven have acquired credits for courses that include IHL learning. Two students have never received a credit for IHL or international law subjects.

To develop the analysis in this study, the author employed the grounded theory approach¹⁷ and its associated procedures,¹⁸ the first one being open coding,¹⁹ which is composed of three steps conducted in each student's case, specifically 1) breaking data down into segments according to the subject of each student's statements or descriptions and identifying properties²⁰ and dimensions²¹ from each data segment, then creating

16. For more details on the Faculty of International Studies at Osaka University of Economics and Law, see *Academics*, ŌSAKA U. ECON. & L., <http://www.keiho-u.ac.jp/english/academics/index.html> [<https://perma.cc/RG5R-D2MY>] (last visited Mar. 7, 2019).

17. The grounded theory approach includes “the discovery of important categories and their properties, their conditions and consequences; the development of such categories at different levels of conceptualization; the formulation of hypotheses of varying scope and generality; and above all the integration of the total theoretical framework.” BARNEY G. GLASER & ANSELM L. STRAUSS, *THE DISCOVERY OF GROUNDED THEORY: STRATEGIES FOR QUALITATIVE RESEARCH* 168–69 (Routledge 3d. paperback ed. 2008). It is also summarized with regard to the grounded theory approach that,

analysis is the act of interpreting data for meaning. Our version of analysis involves taking data apart, conceptualizing it, developing concepts in terms of their properties and dimensions, and then integrating the concepts around a core category. . . . Theorizing is the act of constructing an explanatory scheme that systematically relates concepts to each other around a core concept. Though a theory is a construction derived from data viewed through the eyes of the researcher, doing qualitative research remains a valuable endeavor.

JULIET CORBIN & ANSELM STRAUSS, *BASICS OF QUALITATIVE RESEARCH: TECHNIQUES AND PROCEDURES FOR DEVELOPING GROUNDED THEORY* 81 (Sage Publications 4th ed. 2015).

18. It is maintained that,

[i]n discovering theory, one generates conceptual categories or their properties from evidence; then the evidence from which the category emerged is used to illustrate the concept. The evidence may not necessarily be accurate beyond a doubt (nor is it even in studies concerned only with accuracy), but the concept is undoubtedly a relevant theoretical abstraction about what is going on in the area studied.

GLASER & STRAUSS, *supra* note 17, at 23. And also, “[t]heory building is a process of going from raw data, thinking about that raw data, delineating concepts to stand for raw data, then making statements of relationship about those concepts and linking them all together into a theoretical whole.” CORBIN & STRAUSS, *supra* note 17, at 189.

19. Coding is defined as “[d]enoting concepts to stand for data,” or “delineating concepts to stand for interpreted meaning of data.” CORBIN & STRAUSS, *supra* note 17, at 85, 220. Open coding is defined as “breaking data apart and delineating concepts to stand for interpreted meaning of raw data.” *Id.* at 239.

20. Properties are defined as “[c]haracteristics or qualities of concepts that define, give specificity, and differentiate one concept from another,” or “characteristics that define and describe concepts.” *Id.* at 57, 220.

21. Dimensions are defined as “[t]he range over which a property can vary,” or “variations within properties.” *Id.*

labels for the data segments on the basis of these properties and dimensions; 2) classifying the data segments by reference to label names, creating categories²² consisting of two or more data segments, and naming the categories based on the label names, properties, and dimensions of the data segments included in the categories; 3) ascertaining connections between the names of labels or categories and the contents of each data segment.

The three stages of the second step, axial coding, are: 1) classifying the categories by structural demarcations through the use of paradigm²³ and context;²⁴ 2) considering the relevance between a core category²⁵ and its explanatory sub-categories by connecting the categories within each structural demarcation to the others on the basis of properties and dimensions, representing the results of consideration with a category relationship diagram;²⁶ and 3) diagramming the analysis of each student's case, integrating²⁷ all category relationship diagrams by referring to similar categories

22. Categories are defined as “[h]igher-level concepts under which analysts group lower-level concepts that then become its subcategories.” *Id.* at 220. About distinction between categories and properties, it is said that,

making a distinction between category and property indicates a systematic relationship between these two elements of theory. A category stands by itself as a conceptual element of the theory. A property, in turn, is a conceptual aspect or element of a category. . . . It must be kept in mind that both categories and properties are concepts indicated by the data (and not the data itself); also that both vary in degree of conceptual abstraction.

GLASER & STRAUSS, *supra* note 17, at 36.

23. Paradigm is defined as “an analytic tool that helps analysts code around a category.” “It consists of a perspective or a set of questions that can be applied to data to help analysts sort out concepts and establish linkages.” CORBIN & STRAUSS, *supra* note 17, at 153.

24. Context “locates and explains action-interaction within a background of conditions and anticipated consequences. In doing so, it links concepts and enhances a theory's ability to explain.” And this is “[a] conceptual term used to denote relationships between concepts and to locate action and interaction in the web of conditions and consequences that surround it.” *Id.* at 153, 172, 268.

25. Core category is defined as “[a] concept that is sufficiently broad and abstract that summarizes in a few words the main ideas expressed in the study.” *Id.* at 187. It is also described that,

A core category is a concept that is abstract and broad enough to be representative of all participants in the study. In addition, it is the category among others that seems to have to greatest explanatory power and the ability to link the other categories to it and to each other. Finally, the core category is one that is sufficiently abstract and can be used in future studies that perhaps are not substantively identical and are similar at a conceptual level, thereby raising the theory to a more general level.

Id. at 188–89.

26. Diagrams are defined as “[v]isual devices that depict relationships between analytic concepts.” *Id.* at 106. It is also explained that diagrams,

are conceptual visualizations of data, and because they are conceptual, diagrams help to raise the researcher's thinking beyond the level of description. Diagrams enable researchers to organize data, keep a record of their concepts and the relationships between them, and integrate their ideas. Diagrams help researchers explain their findings to colleagues and others in vary systematic and organized ways.

Id. at 123.

27. Integration is defined as “[l]inking categories around a central or core category to form theory,” or “[l]inking categories around a core category and refining and trim-

or sub-categories as clues.

The final stage of the grounded theory approach is selective coding, in which the author completes the synthesis of category relationship diagrams and puts the integrated diagram in writing by virtue of the concepts²⁸ including properties, dimensions, label, and category names. Through this approach, the present study theorizes the process patterns of the phenomenon, which is learning IHL through video games, and presents a consideration of this theorization.

Note that this study cannot conduct theoretical sampling²⁹ because of the significant limitation that the sole object of investigation is the data collected from the students belonging to the author's seminar.

ming the theory." *Id.* at 187, 295. Note that it is stated that "anyone who uses the integrated theory can start at a more general level and, focusing upon a specific area within the theory, work down to data." GLASER & STRAUSS, *supra* note 17, at 41.

28. Concepts are defined as "[w]ords used by analysts to stand for interpreted meaning," or "[w]ords that stand for interpreted meaning of data, the conceptual name enabling researchers to group 'raw data' with other 'raw data' that share a common meaning or characteristic." CORBIN & STRAUSS, *supra* note 17, at 57, 220. It should be emphasized that,

[c]oncepts vary in levels of abstraction. There are basic-level concepts. Basic-level concepts are the conceptual names given by a researcher to 'raw' data. There are also higher-level concepts that we call categories. Categories are more abstract terms that denote the major theme that a group of basic-level concepts are pointing to. . . . By using basic-level concepts as the foundation for our theory, we are never too far removed from the data, thereby grounding the theory. Also, basic-level concepts provide the detail, interest, and variation that make theory relevant. While basic-level concepts provide the foundation, higher-level, more abstract concepts provide the structure or framework of a theory. They help hold the theory together. As concepts move toward greater levels of abstraction, they gain greater explanatory power, meaning they can accommodate more detail under them. However, at the same time, they lose some of their specificity. In the end, a well-crafted theory is a blend of detail and abstraction.

Id. at 76-77.

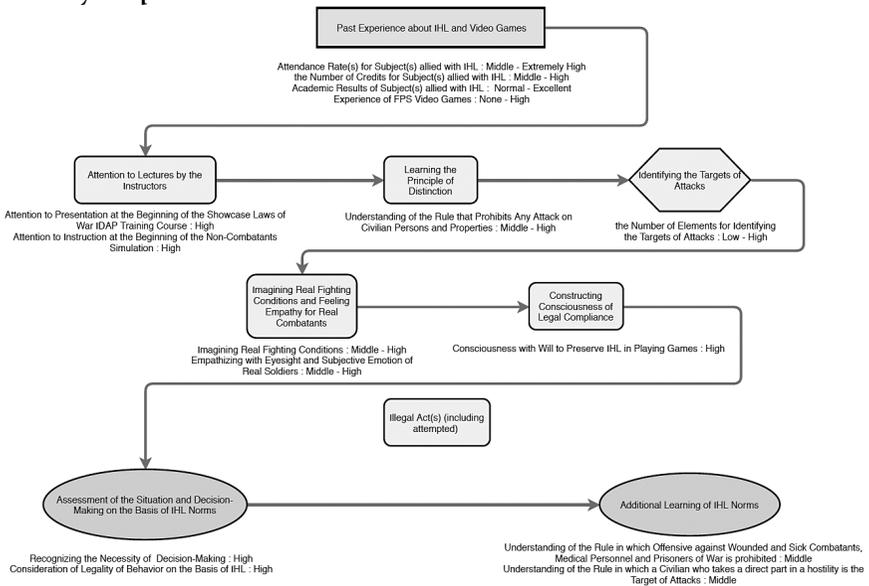
29. Theoretical sampling is defined as "[s]ampling based on properties and dimensions of concepts," "[f]ocused data gathering for the purpose of moving the analysis forward and elaborating categories and relationships," "[a] method of data collection based on concepts derived from data," or "[d]ata collection based on concepts that appear to be relevant to the evolving story line." *Id.* at 85, 106, 134, 239. "The purpose of theoretical sampling is to collect data from places, people, and events that will maximize opportunities to develop concepts in terms of their properties and dimensions, uncover variations, and identify relationships between concepts." *Id.* at 134. It is also referred to that "[t]heoretical sampling is the process of data collection for generating theory whereby the analyst jointly collects, codes, and analyzes his data and decides what data to collect next and where to find them, in order to develop his theory as it emerges." GLASER & STRAUSS, *supra* note 17, at 45.

once, six patterns portrayed in Figure 1 are next elaborated one after another.

In the figures in this Article, rectangles are conditions;³¹ rounded rectangles are actions-interactions;³² a hexagon is a hub action-interaction, the central concept and also the core category; and ellipses denote consequences³³ respectively under the paradigm. In the text of this Article, categories (or portions of them) are provided in angle brackets (< >), properties (or parts of them) are shown in square brackets ([]), and parts of data are given in curly brackets ({ }).

B. Pattern A: Smooth IHL Learning with the Use of Knowledge Already Acquired

Figure 2: Pattern A: Smooth IHL Learning with the Use of Knowledge Already Acquired



The relevance of the concepts in Pattern A depicted in Figure 2 is as follows. When the students who have comparatively high [attendance rate(s) for subject(s) allied with IHL] and relatively good [academic results] with respect to <past experience about IHL and video games> focus highly on <lectures by the instructors> including [presentation at the beginning of

31. Conditions “answer to the questions about why, when, and how come. They refer to the perceived reasons that persons give for why things happen and the explanations that they give for why they respond in the manner that they do through action-interaction.” CORBIN & STRAUSS, *supra* note 17, at 158.

32. Actions-interactions “are the actual responses people or groups make to the events or problematic situations that occur in their lives. The relationship between an event or a set of circumstances and the action-interaction that follows is not a direct cause and effect relationship.” *Id.*

33. Consequences “are anticipated or actual outcomes of action and interaction.” *Id.* at 159.

the *Showcase Laws of War IDAP Training Course*] and [instruction at the beginning of the *Non-Combatants* simulation],³⁴ the students achieve smooth understanding of <the principle of distinction>. And when the students conduct a comparatively high degree of <imagining real fighting conditions and feeling empathy for real combatants> as well as the consideration of <identifying the targets of attacks> based on <the principle of distinction>, this leads to a high degree of <constructing consciousness of legal compliance>. The result is the accomplishment of <assessment of the situation and decision-making on the basis of IHL norms> and subsequent attainment of <additional learning of IHL norms>.

Sample No. 7, the student falling under Pattern A, has 100% [attendance rate(s)] for two subjects associated with IHL and gets [academic results] of S for all of them.³⁵ After taking <lectures by the instructors>, this student mentions that {I learn to attack with the distinction between civilians and combatants} and also states that {I assess foemen principally on colors and also pay attention to equipages (such as rifles) and costumeries (such as bulletproof vests)} in applying the principle of distinction to situations in the game. Striving for <legal compliance> with the consciousness of {international law of war} even in playing the video game and the supposition of <real fighting conditions>, this student carries through <assessment of the situation and decision-making> based on international law (however, the student says contritely that {there are some cases where decision-making is difficult due to being acquainted with international law}). Because of this <assessment of the situation and decision-making>, in the situation of encounter with an injured soldier, the student can recall that [offensive against wounded combatants is prohibited].

Even though the [attendance rate] for one registered subject regarding IHL is 100%, Sample No. 2 merely gets an [academic result] of B.³⁶ This student, however, retains the distinguishing [experience of (four different

34. This instruction provides that: 1) the goals of the simulation are pursuing each room and taking appropriate actions against enemy combatants; 2) it is necessary to pay attention to the colors of characters who are encountered; and 3) what is especially important is that red is hostile, green is friendly, and purple is civilian. See *Minai War Video Games Study*, *supra* note 30.

35. Sample No. 7 has gotten course credits not only for the two subjects associated with IHL (Peace Studies, Security and International Law), but for four subjects allied with Legal Studies (Civil Society and Law (S) (henceforth, each academic results is noted in round brackets. Academic results are arranged as S, A, B, C in decreasing order.), Jurisprudence (S), Specialized Seminar IA (S), International Commerce and Law (C)) as well as six subjects related with International Law (International Society and Law (S), Specialized Seminar IB (S), International Relations and Law (A), Peaceful Settlement of International Disputes and International Law (S), Japan and International Law (S), Specialized Seminar IIA (A)). So, this student is vitally intrigued by study of law and is a high achiever. See *Minai War Video Games Study*, *supra* note 30.

36. Sample No. 2 has gotten credits for, in addition to a subject referred to in the text (Security and International Law), one subject allied with Legal Studies (Specialized Seminar IA (B)) and one subject associated with International Law (Specialized Seminar IB (B)). Furthermore, this student has the experience of not only FPS (first-person shooter) video games but also FPS games controlled by a smartphone. See *Minai War Video Games Study*, *supra* note 30.

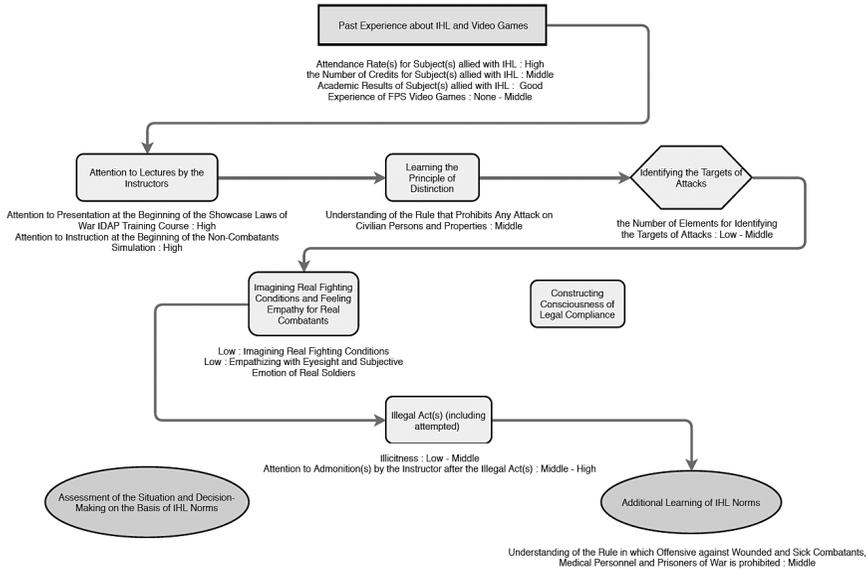
kinds of) FPS video games], which is the greatest among the surveyed students (this student observes that {this video game (i.e., *Arma 3*), unlike the others, presents a ban against shotgunning impugnement}). As mentioning that {this video game is explicative of four rules of conduct that provide that the player shall not attack civilian persons or properties and limits destruction to what the mission requires and so on}, this student remembers relatively accurately the substance of the instructor's presentation at the beginning of the [*Training Course*], which designates the achievement of <learning the principle of distinction>. Although cognizant of few elements for <identifying the targets of attacks> except for the colors of characters ({I do not pay attention to what someone has, such as a rifle, or what someone wears}), this student strongly demonstrates <imagining real fighting conditions and feeling empathy for real combatants> by finding and stating that {in real wars, identifying foemen is difficult because people are not color-coded}. In playing the game, this student conducts <assessment of the situation and decision-making> on the premise of <legal compliance> of <the principle of distinction>: {I will avoid an attack on a purple character, which is a civilian}. When stumbling across a civilian who takes a direct part in a hostility with a rifle blazing, this student determines to fatally shoot that civilian out of necessity, with the result that the student learns that {even civilians can be targets if they are using weapons}.³⁷

In this vein, as a result of the students' focusing firmly on <lectures by the instructors> as well as enhancement of <imagining real fighting conditions> and <consciousness of legal compliance> while tapping into knowledge about IHL and video games the students previously possessed, Pattern A depicts the smooth learning of IHL norms in the form of a rectilinear flow diagram.

37. When the player carries out a strike on an armed civilian who takes a direct part in a hostility, the instruction, which expositis that such civilian's protected status is revoked and that open fire is proper handling, is presented.

C. Pattern B: Committing Illegal Acts as Virtual Reality

Figure 3: Pattern B: Committing Illegal Acts as Virtual Reality



The relatedness of concepts in Pattern B in Figure 3 can be explained as follows. In the case in which the students with relatively high [attendance rate(s) for subject(s) allied with IHL] and relatively good [academic results] regarding <past experience about IHL and video games> pay strong attention to <lectures by the instructors>, such students go through <learning the principle of distinction> and arrive at <identifying the targets of attacks>. The process so far is approximately the same as Pattern A. However, owing to the low degree of [imagining real fighting conditions] and of [empathizing with eyesight and subjective emotion of real combatants], commission of <illegal act(s)> can be seen even though the degree of [illicitness] is comparatively low.³⁸ Subsequently, as a result of taking solid notice of [admonition(s) by the instructor], <additional learning of IHL norms> is completed.

For instance, Sample No. 13 has a 93% [attendance rate] for one IHL-related subject and gets good [academic results] (A).³⁹ Remarking that {I have learned IHL from presentation and instruction by the instructors}, this student exhibits understanding of <the principle of distinction> ({I have learned to open fire at enemy soldiers as distinguished from civilians}). Reiterating the sentiment however that {this video game is pretty

38. Attempted offensives by aiming a gun at characters who are not the targets of attacks and negligent homicides through pulling a trigger mistakenly are observed in the data. See *Minai War Video Games Study*, *supra* note 30.

39. Sample No. 13 has never taken a course relevant to Legal Studies or International Law except for the one subject associated with IHL (Security and International Law). This student, with regard to video games, has played an FPS battle royal game for smartphones. See *Minai War Video Games Study*, *supra* note 30.

difficult to operate}, this student is acutely aware of just playing a video game from first to last and accordingly has never expressed <imagining real fighting conditions and feeling empathy for real combatants>; this student {has shot a civilian by mistake}. After doing so, drawing attention to the fact that {admonitions are given by the instructor}, this student can enjoy <additional learning of IHL norms>, which provides that an {attack against sick and wounded soldiers without weapons is prohibited}.

Sample No. 5⁴⁰ is also fixated on just playing a video game, expressing that {this game is hard to operate} and {hit point of the player character is scarce}, and confesses an attempted crime which is {to level a gun at civilians immoderately}. In the aftermath, discussing {hanging on warning captions provided by the instructor}, this student conveys in-depth understanding of the principle of distinction.

As detailed above, if players persist in acting out narratives in the world of a video game or virtual reality without <imagining real fighting conditions>, even though the players have studied <the principle of distinction> and examined identification of <the targets of attacks>, such players show a tendency to resort to <illegal act(s)>, revealing a pattern that connects such malefaction to IHL learning. A reason for this pattern could be lack of <consciousness of legal compliance> with rules against <illegal act(s)> as virtual reality (in fact, the students falling into Pattern B have never gone through <constructing consciousness of legal compliance>).

40. Sample No. 5 has gotten credits in two courses related to Legal Studies (Taxation Law (C), Specialized Seminar IB (B)) and one subject about IHL (Security and International Law (A)). This student has seldom passed through FPS video games. See *Minai War Video Games Study*, *supra* note 30.

D. Pattern C: Disregarding the Instructor's Lectures and Committing Illegal Acts

Figure 4: Pattern C: Disregarding the Instructor's Lectures and Committing Illegal Acts

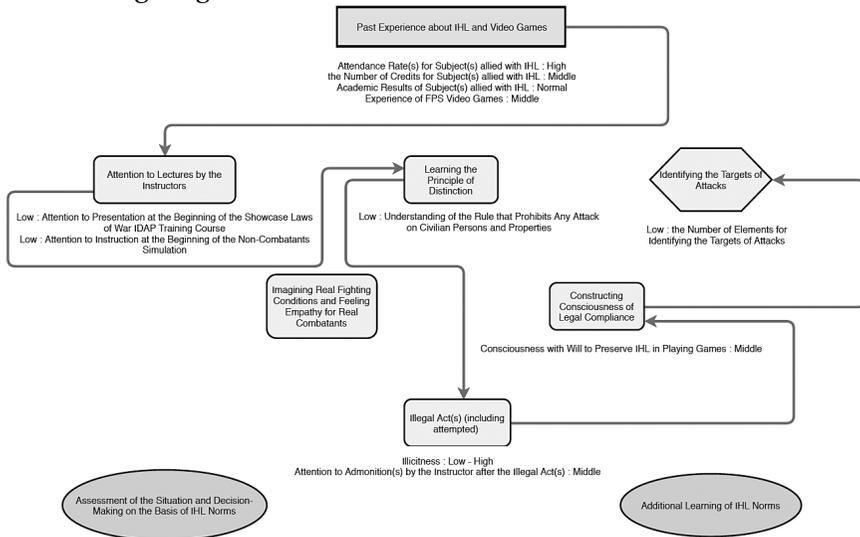


Figure 4 above illustrates Pattern C's relativity of concepts as follows. Although having acquired almost the same <experience about IHL and video games> as in Patterns A and B, students with a low degree of <attention to lectures by the instructors> do not come close to <learning the principle of distinction>, and they commit <illegal act(s)> with strong [illicitness].⁴¹ Thereafter, by concentrating on [admonitions by the instructor], the students succeed in <constructing consciousness of legal compliance>, but they do not create a bond with <additional learning of IHL norms>, resulting in inadequately <identifying the targets of attacks>.

Sample No. 4, despite high [attendance rate for subject allied with IHL] and [academic results] of B,⁴² pays little notice to <lectures by the instructors> resulting in inaccurate understanding of <the principle of distinction>, stating that {I have studied the rule that attacking blue force is forbidden}. Nevertheless, this student states that {I have shot a friendly} and so confesses purposeful commitment of an <illegal act>. Finding that {cautionary words are delivered} as the result of the illegal act, the student registers <consciousness of legal compliance> about {interdiction of aiming

41. Deliberately gunning down characters who shall not be the targets of attacks is confirmable in the data. See *Minai War Video Games Study*, *supra* note 30.

42. Sample No. 4 has earned credits for a subject as to IHL which is mentioned in the text (Security and International Law), two subjects regarding Legal Studies (Civil Society and Law (A), Specialized Seminar IB (B)), and three subjects about International Law (International Society and Law (C), Peaceful Settlement of International Disputes and International Law (B), Japan and International Law (B)). This student has the experience of playing two types of FPS video games. See *Minai War Video Games Study*, *supra* note 30.

at comradely soldiers}. This student however merely {has an eye to the color coding between friendly and enemy combatants} without the correct understanding of <the principle of distinction>.

In this manner, we observe the pattern in which students involved in an <illegal act> learn little from it if they do not pay attention to <lectures by the instructors>, despite having relatively superior <past experience about IHL and video games>. This in turn suggests that to learn IHL norms including <the principle of distinction> through video games, <attention to lectures by the instructors> are a critically significant relay point.

E. Pattern D: Learning IHL Norms on the Basis of Lectures by the Instructors

Figure 5: Pattern D: Learning IHL Norms on the Basis of Lectures by the Instructors

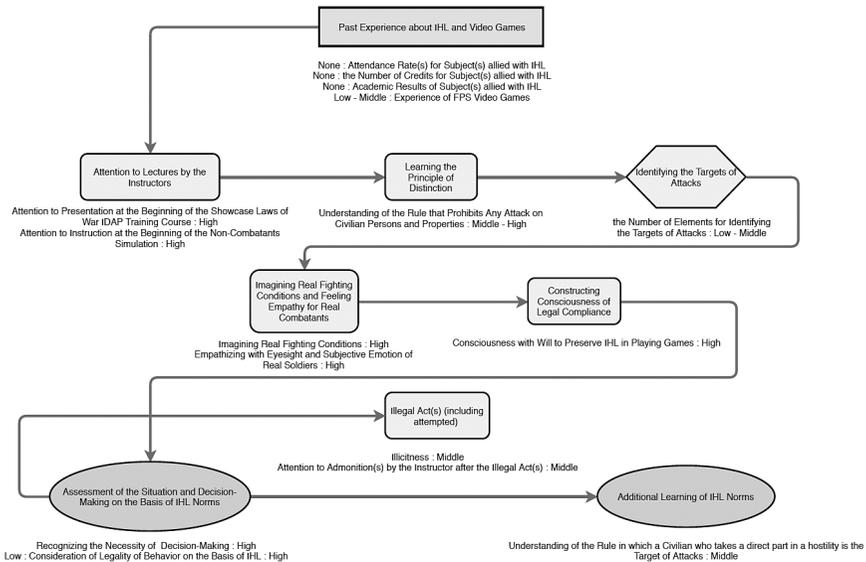


Figure 5 depicts the concepts relationship of Pattern D as follows. Even students who have never participated in courses pertinent to IHL with regard to <past experience about IHL and video games> can comprehend <the principle of distinction> by means of turning their strong <attention> toward the instructors' [presentation] and [instruction]. Consequently, as with Pattern A, running through <identifying the targets of attacks> and a high level of <imagining real fighting conditions and feeling empathy for real combatants> as well as high degree of <constructing consciousness of legal compliance>, these students display a willingness to make a proper <assessment of the situation and decision-making on the basis of IHL norms>. After this, however, the pathway bifurcates so that some students deepen <additional learning of IHL norm(s)> in the same way as Pattern A, and the others turn to <illegal act(s)>.

Sample No. 1, who follows the former route where <additional learning of IHL norm(s)> is developed, has no experience of taking part in a course involved to IHL but has midrange [experience of FPS video games].⁴³ This student mentions that {the presentation and instruction by instructors instruct that persons outside of enemy combatants and civilian properties shall not be attacked in war} and so achieves abundantly rigorous learning of <the principle of distinction> by paying good attention to <lectures by the instructors>. Moreover, this student says that {in the game, we can readily grasp circumstances of the enemy, friendly forces, and our surroundings, but if in real war, it should be difficult to capture the circumference environment because of buildings damaged by onfall, as well as to make flexible judgments due to psychological disturbances based on trepidation that our lives can be threatened} and that {I have learned from the game that it is necessary to make behavioral judgments in a blink after finding out who is an opposing soldier or who has turned loose, in accordance with IHL norms}. In this way, this student moves smoothly through <imagining real fighting conditions and feeling empathy for real combatants>, <constructing consciousness of legal compliance>, and <assessment of the situation and decision-making on the basis of IHL norms> in sequence. Finally, stating that {although I dithered over whether I may shoot an armored civilian, I have attacked him with intention to act in legitimate self-defense because he discharged a gun at me}, the student exhibits <additional learning of IHL norms> anomalously.

Sample No. 14, who follows the route where <illegal act(s)> are committed, has analogous <past experience about IHL and video games> to Sample No. 1.⁴⁴ This student observes that {characters are color-coded in this game, but in real war without such color coding, there is a possibility that soldiers shoot the wrong target} and so sufficiently demonstrates a conception of <real fighting conditions and empathy for real combatants> in keeping with <identifying the targets of attacks> based upon <the principle of distinction>. Being deficient in [consideration of legality of behavior on the basis of IHL], however, the student repeatedly makes an admission of performing the <illegal act> of negligently attacking an invalid ({I have shot an unarmed enemy soldier to death}). Regrettably, the student only discloses the fact of committing <illegal act> and has never arrived at <additional learning of IHL norms>.

It becomes obvious that, even if students have never participated in courses in respect of IHL as with Pattern D, <assessment of the situation and decision-making> can be obtained by following the same route as Pat-

43. Sample No. 1 has attended three courses bearing on International Law (International Society and Law, Peaceful Settlement of International Disputes and International Law, Japan and International Law) but flunked all these classes. This student has two sorts of FPS video games experience. See *Minai War Video Games Study*, *supra* note 30.

44. Sample No. 14 has never participated in a course regarding IHL, but has gotten credits for one subject about Legal Studies (Specialized Seminar IB (B)) and one subject connected with International Law (Peaceful Settlement of International Disputes and International Law (B)). This student has the experience of two kinds of FPS video games. See *Minai War Video Games Study*, *supra* note 30.

civilians are discriminated from enemy combatants}, this student has unequivocally learned <the principle of distinction> by active identification of <the targets of attacks>. Afterwards, the student evinces an attitude of confirming not only the color of characters but {what the characters carry with them} then attempts <identifying the targets of attacks> again and shows <imagining real fighting conditions and feeling empathy for real combatants> by getting a feel for {difficulty of gunning foemen and cruelty of war}. Furthermore, saying that {I have made a decision whether or not to attack by focusing mainly on color}, this student engages in <assessment of the situation and decision-making on the basis of IHL norms>.

Sample No. 3⁴⁶ also pursues the route from <identifying the targets of attacks> to <learning the principle of distinction>, mentioning that {because enemy characters are differentiated by color, I have been able to learn the rule that shooting friendly soldiers or civilians is forbidden}. And this student, with regard to <assessment of the situation and decision-making on the basis of IHL norms>, {visually establishes whether a character is hostile or not and makes determinations of open fire}. Moreover, the student has accomplished <additional learning of IHL norms>, which provides that {armed civilians who take a direct part in a hostility may be attacked} and that {injured enemy soldiers shall not be the targets of attacks}.

In this vein, even if students are new to IHL concepts and do not pay close attention to <lectures by the instructors>, they may discover <the principle of distinction> inductively by considering elements for <identifying the targets of attacks>, which are required to progress in the game.

46. Sample No. 3 hasn't registered any courses in respect of IHL, but has gotten credits for a subject about Legal Studies (Human Rights in Modern Society (B)) and two subjects associated with International Law (International Society and Law (C), International Cooperation Law (S)). This student is inexperienced in playing an FPS video game. See *Minai War Video Games Study*, *supra* note 30.

G. Pattern F: Trajectory Modification from Illegal Acts

Figure 7: Pattern F: Trajectory Modification from Illegal Acts

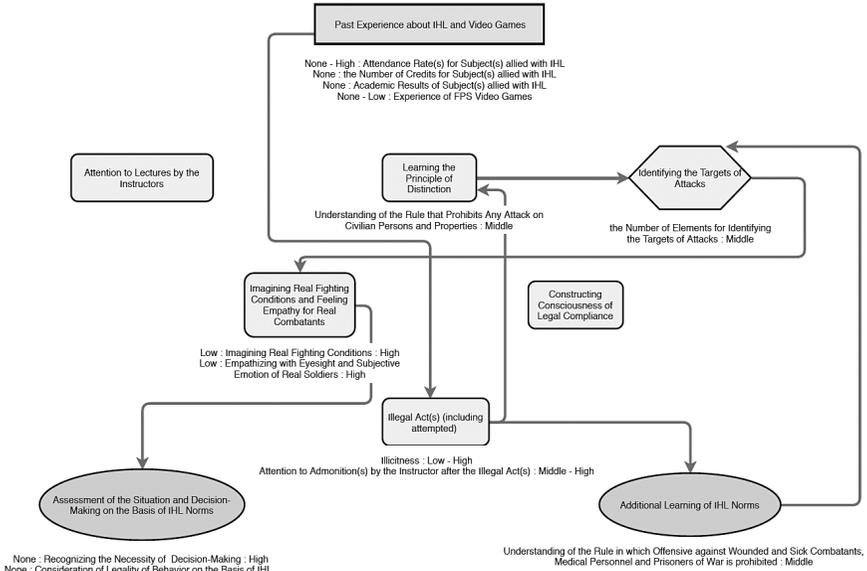


Figure 7 illustrates the concepts relationship in Pattern F as follows. When students cannot get [course credit(s)] in spite of relatively high [attendance rate(s) for subject(s) allied with IHL], or alternatively, when students have no <past experience about IHL and video games>, they immediately commit <illegal act(s)> in the game. By paying [attention to admonition(s) by the instructor after the illegal act(s)], however, students can achieve <learning the principle of distinction> and/or <additional learning of IHL norms>, with the result that they can begin to consider <identifying the targets of attacks>. As it turned out, students get around to <assessment of the situation and decision-making on the basis of IHL norms> by virtue of <imagining real fighting conditions and feeling empathy for real combatants>.

Sample No. 12 has a 64% [attendance rate for a subject associated with IHL] but cannot get [credit] for it.⁴⁷ Moving ahead with the game without <attention to lectures by the instructors>, this student owns up to the perpetration of an <illegal act> by admitting that {I have shot a civilian by mistake}. After this <illegal act>, the student remarks that by focusing on [admonition by the instructor], {I have found out that negligent homicide of civilian persons is strongly banned}, thereby exhibiting <learning

47. Sample No. 12 cannot get a credit in a course about IHL (Security and International Law) as in the text, but has gotten credits for two subjects in Legal Studies (Jurisprudence (C), Japanese Constitutional Law (A)) as well as three International Law subjects (Specialized Seminar IB (C), Peaceful Settlement of International Disputes and International Law (B), Japan and International Law (A)). This student has experience of one kind of FPS game for smartphones. See *Minai War Video Games Study*, *supra* note 30.

the principle of distinction>. In addition, <identifying the targets of attacks> via {verification of what color each character is or whether armed or not}, this student demonstrates <imagining real fighting conditions and feeling empathy for real combatants>, observing that {it is difficult to distinguish between enemy combatants and civilians in the real military field}. The student then mentions that {it is required to check upon whether characters are enemy combatants by looking into their color, whether they are armed or not, as well as whether they fire guns or not} and thereby accomplishes <assessment of the situation and decision-making on the basis of IHL norms>.

Sample No. 11 also has a 73% [attendance rate for a subject associated with IHL], for which he does not receive [credit].⁴⁸ After committing attempted <illegal act(s)> by leveling a gun at a sick and wounded soldier and medical personnel within enemy forces, this student achieves <additional learning of IHL norms>, saying that {I am surprised that it is prohibited to attack invalids and medical personnel}. Moreover, stating that {I find it difficult to identify enemy soldiers in real war because they are not color-coded unlike this game where foemen are differentiated by color}, the student goes through <identifying the targets of attacks> and <imagining real fighting conditions and feeling empathy for real combatants>. In the end, this student expresses that {this game makes players determine what to do by means of elements for identification including colors} and consequently performed <assessment of the situation and decision-making on the basis of IHL norms>.

It is unclear whether there is a causal relation between flunking a course [credit] with a comparatively high [attendance rate for a subject associated with IHL] and resorting to <illegal act(s)> without paying <attention to lectures by the instructors>. These students do not appear to have the propensity to grasp the key concepts of IHL by simply attending lectures.

Despite having no <past experience about IHL and video games>, Sample No. 6⁴⁹ pays no <attention to lectures by the instructors> and admits conducting serious <illegal act(s)>, saying that {I have committed a number of lawless killings}. This student is then successful in <additional learning of IHL norms> such as the proscription of assailing protected combatants including sick and wounded soldiers and has developed the skill of <identifying the targets of attacks>, stating that {it is important to compass whether enemy characters have firearms or not before discharge}. This student, however, points out that {I cannot be connected emotionally

48. Sample No. 11 attends two Legal Studies courses (Jurisprudence, Taxation Law) and one International Law course (International Society and Law) other than an IHL course (Security and International Law) referred to in the text. But this student has never been able to get all course credits. See *Minai War Video Games Study*, *supra* note 30.

49. Sample No. 6 has never registered any courses about IHL. Yet, this student has gotten course credits for one subject regarding Legal Studies (Specialized Seminar IB (S)) and one subject in International Law (Peaceful Settlement of International Disputes and International Law (B)). See *Minai War Video Games Study*, *supra* note 30.

to this game} and thus exhibits a low degree of <imagining real fighting conditions and feeling empathy for real combatants>. This student has thus not attained successful <assessment of the situation and decision-making on the basis of IHL norms>.

One of the reasons for Sample No. 6's lower degree of intention to apply IHL in comparison to Samples No. 11 and 12 could be that, unlike 11 and 12, this student does not engage in <imagining real fighting conditions and feeling empathy for real combatants>, which have helped 11 and 12 to learn IHL norms.

It becomes obvious from Pattern F that, even if students commit <illegal act(s)>, they can make a trajectory modification toward <learning the principle of distinction> or <additional learning of IHL norms> when focusing on [admonition(s) by the instructor]. Thus, it can be considered that, in making the trajectory modification from these <illegal act(s)>, a high degree of [attention to admonition(s) by the instructor after the illegal act(s)] is a key factor.

III. Discussion

A. Exordium

As detailed above, the phenomenon of learning IHL through war video games is described in the six different patterns (Pattern A-F), which represent the relevance of the <identifying the targets of attacks> conception and eight girdle-like sub-categories on the basis of the difference in combinations of properties and dimensions (see Figure 1). It can be explained that students who intend to learn IHL by virtue of video games follow one of the six paths and achieve their own goal in varying degrees.

In the following sections, by intercomparing the six patterns that constitute the phenomenon of IHL learning through video games (e.g., Pattern A and B; Pattern A and C), and analyzing all fifteen combinations of these patterns, the author examines the significance of the conceptions that configure the IHL learning phenomenon. The following items are considered in turn: 1) the learning effect of paying attention to lectures by the instructors; 2) the learning effect of working on elements for identifying the targets of attacks; 3) the learning effect of imagining real fighting conditions and feeling empathy for real combatants; 4) the learning effect of paying attention to admonitions by the instructor after illegal acts; and 5) two models of constructing consciousness of legal compliance.

B. The Learning Effect of Paying Attention to Lectures by the Instructors

It becomes clear that paying attention to lectures by the instructors has the effect of hoisting students without IHL learning experience up to the same level learning process as that of students with experience. Pattern D, in which students have no <past experience about IHL>, is almost the same as Pattern A, in which students have plenty <past experience about IHL>. In Patterns E and F, where students have little <past experience about

IHL>, on the other hand, students pay no, or a low degree of, <attention to lectures by the instructors> and pursue lines totally different from Pattern A. Moreover, as will be seen below, <attention to lectures by the instructors> plays the role of a starting point for ways of <learning the principle of distinction> and <identifying the targets of attacks>. It is therefore considered that by acquiring a high level of <attention to lectures by the instructors> and designating it as a starting point, Pattern D can frame a route approximate to Pattern A.

This effect of learning based on attention to lectures by the instructors is superior to that of learning through exploration of identifying the targets of attacks and by paying attention to admonitions by the instructor after illegal acts. Patterns A, B, and D, in which students attempt <learning the principle of distinction> by paying strong attention to <lectures by the instructors>, include a medium to high degree of [understanding of the rule that prohibits any attack on civilian persons and properties]. In contrast, in Pattern E, students link <learning the principle of distinction> with <identifying the targets of attacks>, but their [understanding of the rule that prohibits any attack on civilian persons and properties] remains moderate. Besides, in Pattern F, in which students achieve <learning the principle of distinction> by means of [attention to admonition(s) by the instructor after illegal act(s)], they have midrange [understanding of the rule that prohibits any attack on civilian persons and properties].

Paying attention to lectures by the instructors is one of the significant components of learning the principle of distinction and has a positive correlative relationship with a smooth connection to identifying the targets of attacks after such learning. In Patterns A, B, and D, students with a high level of <attention to lectures by the instructors> exhibit a medium to high degree of [understanding of the rule that prohibits any attack on civilian persons and properties]. Meanwhile, students in Patterns C or E scarcely pay <attention to lectures by the instructors> and exhibit no [understanding of the rule that prohibits any attack on civilian persons and properties] or do not accomplish <learning the principle of distinction> itself. As mentioned above, when students pay good attention to <lectures by the instructors>, <learning the principle of distinction> is achieved. Additionally, only in the case of paying a high degree <attention to lectures by the instructors> in Patterns A, B, and D do students pass through <learning the principle of distinction> and <identifying the targets of attacks> in sequential order. It can therefore be concluded that the success of paying <attention to lectures by the instructors> is the threshold of <learning the principle of distinction> and <identifying the targets of attacks>.

When attention to lectures by the instructors is at a low level, learning the principle of distinction becomes scarce even if students have IHL experience, resulting in the commission of illegal acts in some cases. Similar to Pattern A, Pattern C students have relatively abundant <past experience about IHL> but face a dearth of <learning the principle of distinction> and sometimes perform <illegal act(s)> due to low-grade <attention to lectures

by the instructors>.⁵⁰

It is further considered that there is no relation between the depth of the learning experience with regard to IHL and the presence or extent of attention to lectures by the instructors. On the one hand, as in Pattern C, there are cases of students with <past experience about IHL> paying low <attention to lectures>. On the other hand, as in Pattern D, there are occasions when students pay a high degree of <attention to lectures> even without <past experience about IHL>.

As discussed above, paying attention to lectures by the instructors not only serves as the starting point for players without IHL learning experience to achieve the same high level of IHL learning through video games as players who have already completed professional IHL education but also, at the same time, has a larger learning effect than the other learning opportunities in video games. It can be said that, in *Arma 3*, configuring the presentation and instruction by the instructors at the beginning of the *Showcase Laws of War IDAP Training Course* and the *Non-Combatants* simulation is quite an effective strategy for IHL learning. In order for these lectures to exert maximum learning effects, it is key that players pay strong attention to them; this in turn requires the game to have fascinating contrivances to draw their attention to the fullest extent possible. It is important to pursue such appealing methods as including in instructors' lectures an exemplar video clip that expressly provides demarcation between legal and illegal acts.

C. The Learning Effect of Working on Elements for Identifying the Targets of Attacks

It becomes apparent that working on elements for identifying the targets of attacks can have a learning effect that can substitute for paying attention to lectures by the instructors (except for constructing consciousness of legal compliance). To wit, Pattern E's route after <learning the principle of distinction> through reflecting on <identifying the targets of attacks> is almost the same as Patterns A and D in which students pay sufficient <attention to lectures by the instructors> (except for <constructing consciousness of legal compliance>). As will be argued, the cause of not <constructing consciousness of legal compliance> in Pattern E is low level <attention to lectures by the instructors>, which leads to the conclusion that <identifying the targets of attacks> yields the learning effect other than for <constructing consciousness of legal compliance>.

It must be said, however, that IHL learning by working on elements for identifying the targets of attacks has a chancy learning effect compared to paying attention to lectures by the instructors. This is because the former

50. In this regard, notice that students in Pattern C can proceed on to <learning the principle of distinction> at least, even though with weak <attention to lectures by the instructors>. Which is because the students have <past experience about IHL>. In Pattern E, by contrast, students cannot get to <learning the principle of distinction> because of the absence of <past experience about IHL> and low-level <attention to lectures by the instructors>. See *Minai War Video Games Study*, *supra* note 30.

is a haphazard event that hinges upon inductive discovery of specific IHL norms on the basis of each player's reasoning ability. IHL learning through paying attention to lectures by the instructors has more certainty in the sense that this learning is conducted by players who have received direct and passive education. And also, unlike in Pattern E, learning through lectures is more efficient because its flow diagram does not show a tangled circulation.

Working on elements for identifying the targets of attacks can have a more powerful learning effect than the invocation of knowledge from past experience about IHL. In Pattern C, even with a great deal of <past experience about IHL>, students pay poor <attention to lectures by the instructors> and are deficient in <learning the principle of distinction>. It can be easily inferred that the cause of Pattern C's confrontive attainment of <learning the principle of distinction> despite a lack <attention to lectures by the instructors> is the fact that students can evoke scholarship from <past experience about IHL> unlike in Pattern E. In Pattern E, students do not get around to <learning the principle of distinction> straightforwardly from <lectures>, but they have completed this <learning> to a medium degree cyclically by <identifying the targets of attacks> in the game, with the result that they display more IHL learning than in Pattern C.

Whether or not learning the principle of distinction is directly linked to consideration of identifying the targets of attacks depends on the degree of understanding of the rule that prohibits any attack on civilian persons and properties in learning the principle. Pattern C is the sole pattern in which <learning the principle of distinction> does not lead directly to <identifying the targets of attacks>, resulting in low-caliber [understanding of the rule that prohibits any attack on civilian persons and properties]. Antithetically, every pattern that does not include Pattern C transfers to <identifying the targets of attacks> immediately after <learning the principle of distinction> and shows a medium to high degree of [understanding of the rule].

As described above, working on elements for identifying the targets of attacks has a rarefied learning effect equivalent to paying attention to lectures by the instructors, and this learning effect surpasses that of invoking knowledge from IHL learning experience. The weak point of IHL learning through working on elements for identifying the targets of attacks is however that this learning method has an aleatory and uncertain process. Given that midrange learning of the principle of distinction can hook up smoothly with identifying the targets of attacks, it is more desirable that players pass through learning the principle of distinction and identifying the targets of attacks sequentially and efficiently (not circularly) after paying satisfactory attention to lectures by the instructors, which clearly plays a key element in learning the principle.

D. The Learning Effect of Imagining Real Fighting Conditions and Feeling Empathy for Real Combatants

It turns out that a medium or higher degree of imagining real fighting conditions and feeling empathy for real combatants is a prerequisite for arriving at assessment of the situation and decision-making on the basis of IHL norms. In Pattern B, as a consequence of merely showing a low degree of <imagining real fighting conditions and feeling empathy for real combatants>, players end up committing <illegal act(s)> and indicate a lack of <assessment of the situation and decision-making on the basis of IHL norms>. In Patterns A, D, E, and F, on the other hand, players demonstrate midrange or more <imagining real fighting conditions and feeling empathy for real combatants> in common and conduct an above-average <assessment of the situation and decision-making on the basis of IHL norms>. Of these patterns, Patterns E and F exclude <constructing consciousness of legal compliance>. It thus appears necessary for <assessment of the situation and decision-making on the basis of IHL norms> not to construct <consciousness of legal compliance> but to conduct <imagining real fighting conditions and feeling empathy for real combatants> to a medium or higher degree.

There is a possibility that a low degree of imagining real fighting conditions and of feeling empathy for real combatants leads to the commission of illegal acts even though students have previous IHL learning experience. Conversely, there is a case in which an ample quality of imagining real fighting conditions and of feeling empathy for real combatants does not lead to illegal acts even without the above experience. Both Patterns A and B have enough <past experience about IHL> in common, but a difference between them is in the level of <imagining real fighting conditions and feeling empathy for real combatants>⁵¹ and that Pattern B includes doing <illegal act(s)>. In Pattern E, despite having no <past experience about IHL>, players display a high level of <imagining real fighting conditions and feeling empathy for real combatants> and never commit any <illegal act(s)>. Notice that Pattern D displays the route to perpetrating <illegal act(s)> despite a high quotient of <imagining real fighting conditions and feeling empathy for real combatants>, the reason being that compared to Pattern A, <past experience about IHL> is exiguous or [consideration of legality of behavior on the basis of IHL] is scanty.

From the previous discussion it can be concluded that plenty of imagining real fighting conditions and of feeling empathy for real combatants have the learning effect not only to trigger assessment of the situation and decision-making on the basis of IHL norms but also to avoid conducting

51. Pattern A and B certainly have a difference in presence or absence of <constructing consciousness of legal compliance>. As will become clear, however, <imagining real fighting conditions and feeling empathy for real combatants> is required for <constructing consciousness of legal compliance>, and so they can be consolidated into one difference in <imagining real fighting conditions and feeling empathy for real combatants> as remarked in the text.

illegal acts.⁵² Assessment of the situation and decision-making on the basis of IHL norms (including behavioral decision to eschew illegal acts) by gaming players is the virtual experience of applying and practicing IHL itself as well as a critical phase of acquiring IHL norms and bridging a chasm between them and their application. It is therefore important for game developers to create video games in which players can easily imagine real fighting conditions and feel empathy for real combatants, both of which are conducive to the assessment of the situation and decision-making on the basis of IHL norms and are tied directly to the effect of experiential IHL learning. To this end, developers should construct virtual battlefields as audio-visually realistic as possible.

E. The Learning Effect of Paying Attention to Admonitions by the Instructor after Illegal Acts

It becomes obvious that paying attention to admonitions after illegal acts can have a learning effect that can substitute for paying attention to lectures by the instructors. In Patterns A, B, and D, as a result of paying strong <attention to lectures by the instructors>, players accomplish a medium to high degree of <learning the principle of distinction> and/or <additional learning of IHL norms>. On the other hand, in Pattern F, when students pay sufficient [attention to admonition(s) by the instructor after illegal act(s)], they can go through <learning the principle of distinction> and/or <additional learning of IHL norms> and then follow a pathway similar to Patterns A, B, and D. In the meantime, as in Pattern C, when players even with <past experience about IHL> pay unsatisfactory <attention to lectures by the instructors> and commit <illegal act(s)> with strong [illicitness], the degree of success of <learning the principle of distinction> remains low and subsequent IHL learning is bottled up. As just described for Pattern F, learning IHL norms, imagining real fighting conditions, and feeling empathy for real combatants, as well as assessing the situation and making decisions on the basis of IHL norms can be obtained by paying strong attention to admonitions after illegal acts rather than paying inadequate attention to lectures and inadequately learning IHL. It can therefore be concluded that paying attention to admonitions after illegal acts potentially has as good or better of a learning effect as paying attention to lectures by the instructors.

Paying attention to admonitions after illegal acts also has the learning effect of preventing recurrence of illegal acts by players who do not construct consciousness of legal compliance. Due to the low level of <imagining real fighting conditions and feeling empathy for real combatants>, Pattern B involves committing <illegal act(s)>. By contrast, in Pattern F, players pay [attention to admonition(s) by the instructor] after <illegal act(s)> and learn IHL norms, with the result that those who cannot adequately conduct <imagining real fighting conditions and feeling empathy for real combatants> show no repetition of <illegal act(s)>. Paying atten-

52. See *Minai War Video Games Study*, *supra* note 30.

tion to admonitions after illegal acts therefore has a learning effect that can substitute for constructing consciousness of legal compliance.

In this way, paying attention to admonitions after illegal acts that are intrinsically undesirable has much the same learning effect as paying attention to lectures by the instructors or constructing consciousness of legal compliance. Only if players who are lacking in IHL experience and attention to lectures by the instructors pay attention to admonitions popping up after illegal acts will they learn IHL norms such as the principle of distinction and draw nigh to constructing consciousness of legal compliance. In this sense, the very admonition after illegal acts bears the function of the safety tether not to undermine IHL learning. This duplex system architecture including lectures and admonitions by the instructors in the video game provides a collateral for securing the IHL learning effect. It is therefore more efficient to refine the content of admonitions after illegal acts and better a mechanism for bringing players to the attention of these admonitions as much as possible to ensure the thoroughness of this two-pronged securement.

F. Two Models of Constructing Consciousness of Legal Compliance

Our findings reveal that constructing consciousness of legal compliance can be classified into two models. One is constructing consciousness of legal compliance to actively protect IHL on the basis of imagining real fighting conditions and feeling empathy for real combatants (Model X), and the other is constructing consciousness of legal compliance to target the prevention of a recurrence of illegal acts on the basis of paying attention to admonitions after illegal acts (Model Y). In Patterns A and D, players run through <attention to lectures by the instructors>, <learning the principle of distinction>, and <identifying the targets of attacks> in a sequential order and arrive at <constructing consciousness of legal compliance> after sufficient <imagining real fighting conditions and feeling empathy for real combatants>. In contrast, in Pattern C, players with a low degree of <attention to lectures by the instructors> and of <learning the principle of distinction> perpetrate <illegal act(s)> with strong [illicitness], after which they pay [attention to admonition(s) by the instructor] and accordingly succeed at <constructing consciousness of legal compliance> and then move on to <identifying the targets of attacks>. In this vein, <constructing consciousness of legal compliance> in Patterns A and D has an undoubtedly different route from that in Pattern C, so it can be concluded that Pattern A and D fall under Model X and Pattern C falls into Model Y.

It becomes clear that, as a condition for constructing consciousness of legal compliance in Model X, it is necessary to attain a medium or higher degree of attention to lectures, of imagining real fighting conditions, and of feeling empathy for real combatants. The reason for the difference between Patterns A and D, in which Model X's consciousness of legal compliance is constructed, and Pattern B, which has no such consciousness, is the degree of <imagining real fighting conditions and feeling empathy for real combatants>. Accordingly, consciousness of legal compliance in Model X calls for

a medium or higher level of <imagining real fighting conditions and feeling empathy for real combatants>. Meanwhile, the reason for the difference between Pattern D in Model X and Patterns E and F, in which <constructing consciousness of legal compliance> cannot be seen, is the presence and extent of <attention to lectures by the instructors>. A medium or higher degree of <attention to lectures by the instructors> is therefore also required to construct consciousness of legal compliance in Model X. Besides this, a comparison of Pattern D and Patterns E and F shows that <consciousness of legal compliance> in Model X is never constructed when <attention to lectures by the instructors> is underabundant or nonexistent despite a high degree of <imagining real fighting conditions and feeling empathy for real combatants>. Hence, a prerequisite for constructing consciousness of legal compliance in Model X is the fact that a medium or higher degree of attention to lectures is paid and also that a medium or higher degree of real fighting conditions and real combatants' feelings are imagined. Further, comparing Pattern A with Pattern D, we can infer that the IHL learning experience plays a small role in constructing consciousness of legal compliance in Model X.

With regard to constructing consciousness of legal compliance in Model Y, which aims at the prevention of a recurrence of illegal acts, learning specific IHL norms takes priority over constructing consciousness of legal compliance when players concentrate notably on IHL learning after committing illegal acts. In Patterns B and F, as opposed to Pattern C where players engage in the <constructing consciousness of legal compliance> of Model Y and gain no <additional learning of IHL norms>, players head toward <additional learning of IHL norms> or <learning the principle of distinction> after <illegal act(s)> but cannot go through <constructing consciousness of legal compliance> under Model Y.

Of the two models, Model X has an absolute need for a medium or higher degree of attention to lectures, of imagining real fighting conditions, and of feeling empathy for real combatants. It can therefore be emphasized again that paying attention to lectures by the instructors, imagining real fighting conditions, and feeling empathy for real combatants are of crucial significance. It should be restated here that it is important for improvement of the effect of IHL learning through video games to include some attention-grabbing contrivances in order to encourage paying attention to lectures, imagining real fighting conditions, and feeling empathy for real combatants.

Conclusion

Using the grounded theory approach, this study has analyzed the IHL learning phenomenon formed by fourteen player students playing the war video game *Arma 3*. As a result of the data analysis, we identified <identifying the targets of attacks> as the core concept of this phenomenon as well as eight peripheral conceptions (sub-categories), which include <past experience about IHL and video games>; <attention to lectures by the instruc-

tors>; <learning the principle of distinction>; <imagining real fighting conditions and feeling empathy for real combatants>; <constructing consciousness of legal compliance>; <illegal act(s)>; <assessment of the situation and decision-making on the basis of IHL norms>; and <additional learning of IHL norms>. Based on the difference in combinations of properties and dimensions, which make correlations between these concepts, six different patterns emerged: (A) smooth IHL learning with the use of knowledge already acquired; (B) committing illegal acts as virtual reality; (C) disregarding the instructors' lectures and committing illegal acts; (D) learning IHL norms on the basis of lectures by the instructors; (E) discovery of IHL norms during gameplay; and (F) trajectory modification from illegal acts.

After intercomparing fifteen combinations of six patterns, several conclusions can be made about the significance of concepts constituting the above phenomenon as follows. First, <attention to lectures by the instructors> not only can make players without IHL learning experience conduct high-quality learning through video games in a similar manner to players who have already had such experience but also has a greater learning effect than any other concept. Second, working on elements for <identifying the targets of attacks> has a powerful learning effect equivalent to but less certain than <attention to lectures by the instructors>. Third, adequately <imagining real fighting conditions and feeling empathy for real combatants> not only gives rise to <assessment of the situation and decision-making on the basis of IHL norms> but also leads to avoiding committing <illegal act(s)>. Fourth, paying attention to admonitions after <illegal act(s)> that are originally exceptionable has almost the same learning effect as <attention to lectures by the instructors> or <constructing consciousness of legal compliance> and thus fulfills its role as a safety rope for IHL learning. And last but not least, there are two models for <constructing consciousness of legal compliance>, which include the consciousness aspiring to hew to IHL principles in a proactive manner and not resorting to <illegal act(s)> as well as the consciousness intending to prevent a recurrence of <illegal act(s)>. Construction of the former necessitates an appreciable extent of <attention to lectures by the instructors> and of <imagining real fighting conditions and feeling empathy for real combatants>.

This study identifies four operations that function as the linchpins of IHL learning and of applying IHL norms through war video games: paying <attention to lectures by the instructors>; working on elements for <identifying the targets of attacks>; <imagining real fighting conditions and feeling empathy for real combatants>; and paying attention to admonitions after <illegal act(s)>. To enhance the effect of IHL learning through video games, adopting devices that enable players to find these four operations is ideal. It would be useful for developers to introduce into lectures and/or in-game admonitions appealing audio-visual materials to grab players' attention. It would also be beneficial to re-enact combatants' eye lines in extremely realistic virtual battlefields in order to consolidate the degree of

empathy for earthbound hostilities. These features are considered consonant with commercial success of war video games themselves.

While contributing the above findings, this study must admit its incompleteness with respect to data acquisition. Because the fourteen students in this study have taken the author's seminar about IHL by self-selection, there is a possibility that only students who have been highly concerned with IHL became samples. Moreover, given that all fourteen students are juniors at the Faculty of International Studies, this study has not gathered data from students with a huge variety of learning backgrounds. Furthermore, because the study's author is in charge of the seminar, it may have been difficult for the students to refuse to cooperate with the research, which could potentially affect communication in the interviews.

Despite capturing six patterns of IHL learning through war video games and explicating the process of this phenomenon comprehensively, this study still has not reached theoretical saturation⁵³ under the grounded theory approach because it analyzes only the limited data collected from the participating students in the author's seminar. By so doing, the author has not been able to conduct theoretical sampling in which samples are drawn in order to lead to an increase in properties and dimensions, required for developing clarification of connected conceptions on the basis of data analysis. This limitation makes theoretical saturation difficult.

Even with the above limitations, this study has succeeded in the theorization of IHL learning through video games as a phenomenon consisting of six patterns and has elucidated the significance of the conceptions that constitute the phenomenon by virtue of intercomparing the patterns, resulting in a useful study worthy of publishing. In order to substantiate the theory suggested in this study, future investigations should use a quantitative research approach for triangulation.

53. Theoretical saturation "is usually explained in terms of 'when no new concepts are emerging.'" But it "is more than a matter of no new concepts. It also denotes the development of concepts in terms of their properties and includes showing their dimensional variation." It is also defined as "the point in the research when all major categories are fully developed, show variation, and are integrated." CORBIN & STRAUSS, *supra* note 17, at 134, 135. It is also stated that "[t]he criterion for judging when to stop sampling the different groups pertinent to a category is the category's theoretical saturation. Saturation means that no additional data are being found whereby the sociologist can develop properties of the category." GLASER & STRAUSS, *supra* note 17, at 61.

